ACP-PNVDV-A1-ATXR

Intel ATOM Mini ITX Motherboard

Quick Installation Guide

1st Ed – 30 October 2012

Part No. E2017PNVD01R

FCC Statement

THIS DEVICE COMPLIES WITH PART 15 FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.

(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES.

THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTATLLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

Notice

This guide is designed for experienced users to setup the system within the shortest time. For detailed information, please always refer to the electronic user's manual.

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Headquarters and Branch

Avalue Technology Inc.

7F, 228, Lian-cheng Road, Chung Ho City, Taipei, Taiwan

Tel: +886-2-8226-2345 Fax: +886-2-8226-2777

Information: sales@avalue.com.tw Service: service@avalue.com.tw

Avalue USA

Avalue Technology Inc.

9 Timber Lane, Marlboro, NJ 07746-1443

Tel: (732) 414-6500

Fax: (732) 414-6501

Information: sales@avalue-usa.com

Service: support@avalue-usa.com

Avalue Europe

Avalue Europe A/S

Moelledalen 22C, 3140

Aalsgaarde, Denmark

Tel: +45-7025-0310

Fax:+45-4975-5026

Information: sales.europe@avalue.com.tw

Service: service.europe@avalue.com.tw

BCM Advanced Research

BCM Advanced Research

an Avalue Company

7 Marconi, Irvine, CA92618

Tel: +1-949-470-1888

Fax: +1-949-470-0971

Information: BCMSales@bcmcom.com

Web: www.bcmcom.com

Avalue China

Avalue Technology Inc.

Room 805, Building 9,No.99 Tianzhou Rd.,

Caohejing Development Area,

Xuhui District, Shanghai

Tel: +86-21-5169-3609

Fax:+86-21-5445-3266

Information: sales.china@avalue.com.cn

Service: service@avalue.com.tw

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1. Getting Started

1.1 Safety Precautions

Warning!

Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Caution!

Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

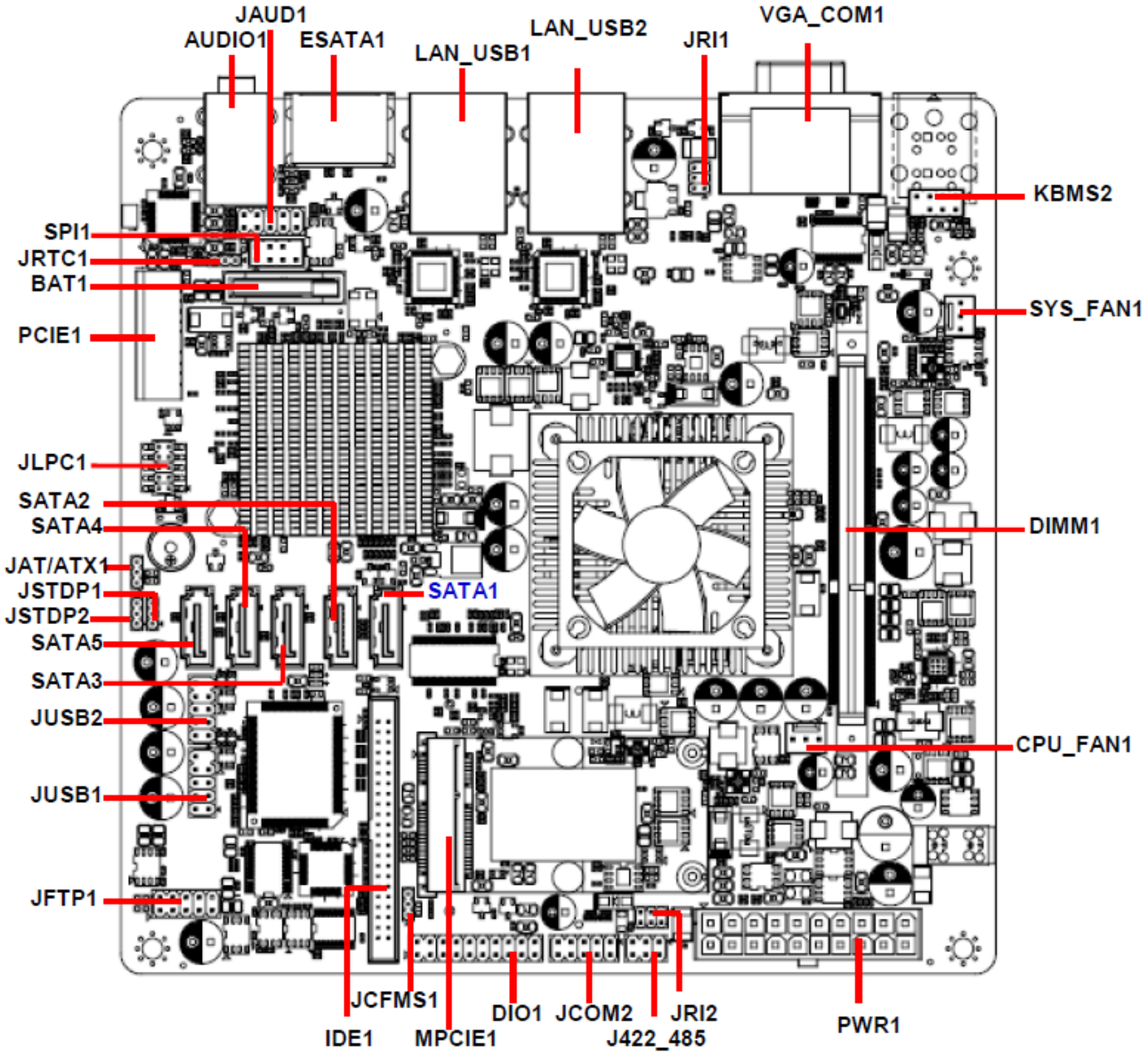
1.2 Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 x ACP-PNVDV-A1-ATXR Intel ATOM Mini ITX Motherboard
- 1 x Quick Installation Guide for ACP-PNVDV-A1-ATXR
- 1 x DVD-ROM contains the followings:
  - User's Manual (this manual in PDF file)
  - Ethernet driver and utilities
  - VGA drivers and utilities
  - Audio drivers and utilities
- 1 x Cable set contains the followings:
  - 1 x Wire SATA Power (15P/1.27-4P/5.08)
  - 1 x Serial ATA Cable (7P/1.27mm-7P/1.2)
- 1 x I/O Shield

2. Hardware Configuration

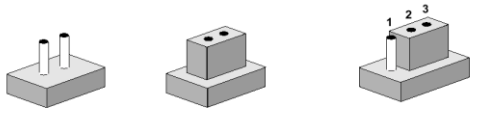
2.1 Product Overview



2.2 Jumper and Connector List

You can configure your board to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch.

It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper you connect the pins with the clip. To “open” a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either two pins.



Open Closed Closed 2-3

The jumper settings are schematically depicted in this manual as follows:

Open Closed Closed 2-3

A pair of needle-nose pliers may be helpful when working with jumpers.

Connectors on the board are linked to external devices such as hard disk drives, a keyboard, or floppy drives. In addition, the board has a number of jumpers that allow you to configure your system to suit your application.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

The following tables list the function of each of the board’s jumpers and connectors.

Jumpers

Label	Function	Note
JRI1	Serial port 1 pin9 signal selector	3 x 2 header, pitch 2.00 mm
JRI2	Serial port 2 pin9 signal selector	3 x 2 header, pitch 2.00 mm
JAT/ATX1	AT/ ATX power mode select	3 x 1 header, pitch 2.00mm
JCFMS1	CF/IDE Master/SLAVE Selector	3 x 1 header, pitch 2.00 mm
JSTDP1~2	SATA Dom power jumper 1~2	3 x 1 header, pitch 2.00 mm
JRTC1	Clear CMOS	3 x 1 header, pitch 2.00 mm

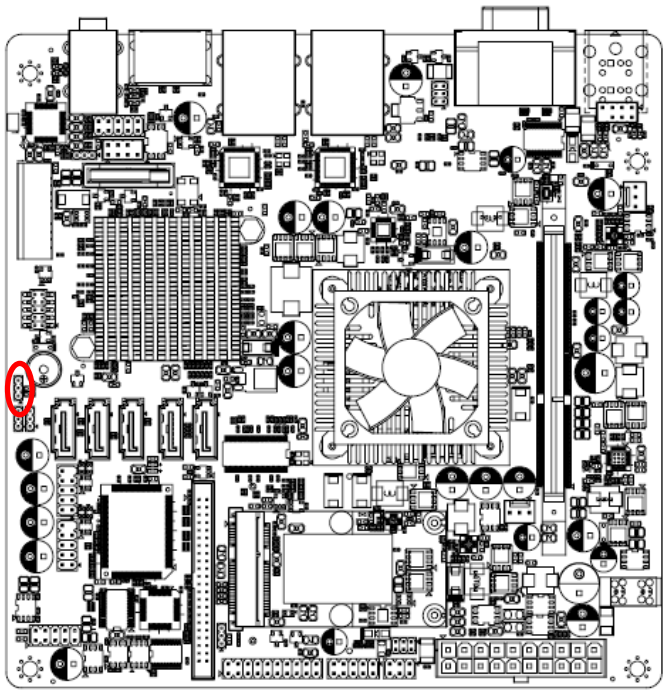
Connectors

Label	Function	Note
BAT1	Battery holder	

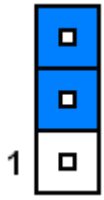
J422_485	Serial port 2 in RS-422/485 mode	3 x 2 header, pitch 2.54 mm
JCOM2	Serial port connector 2	5 x 2 header, pitch 2.54 mm
DIMM1	204-pin SODIMM DDR3 connector	
DIO1	General purpose I/O connector	10 x 2 header, pitch 2.54 mm
IDE1	Primary IDE connector	
KBMS2	Keyboard/Mouse connector	4 x 2 header, pitch 2.54mm
JFTP1	Miscellaneous settings connector	5 x 2 header, pitch 2.54mm
JLPC1	Low Pin Count connector	5 x 2 header, pitch 2.00mm
JUSB1	USB connector 1	5 x 2 header, pitch 2.54mm
JUSB2	USB connector 2	5 x 2 header, pitch 2.54mm
SATA1~5	Serial ATA connector 1~5	
SPI1	SPI connector	4 x 2 header, pitch 2.54mm
PWR1	ATX power connector	10 x 2 wafer, pitch 4.20mm
SYS_FAN1	System Fan connector 1	3 x 1 wafer, pitch 2.54mm
PCIE1	PCI Express connector 1	
AUDIO1	Audio connector	
JAUD1	Audio connector	5 x 2 header, pitch 2.54mm
ESATA1	ESATA connector 1	
LAN_USB1~2	LAN_USB connectors 1~2	
VGA_COM1	VGA_COM connector 1	
CPU_FAN1	CPU fan connector 1	3 x 1 wafer, pitch 2.54mm
MPCIE1	Mini-PCI connector 1	

2.3 Setting Jumpers & Connectors

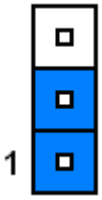
2.3.1 AT/ATX power mode select (JAT/ATX)



ATX*

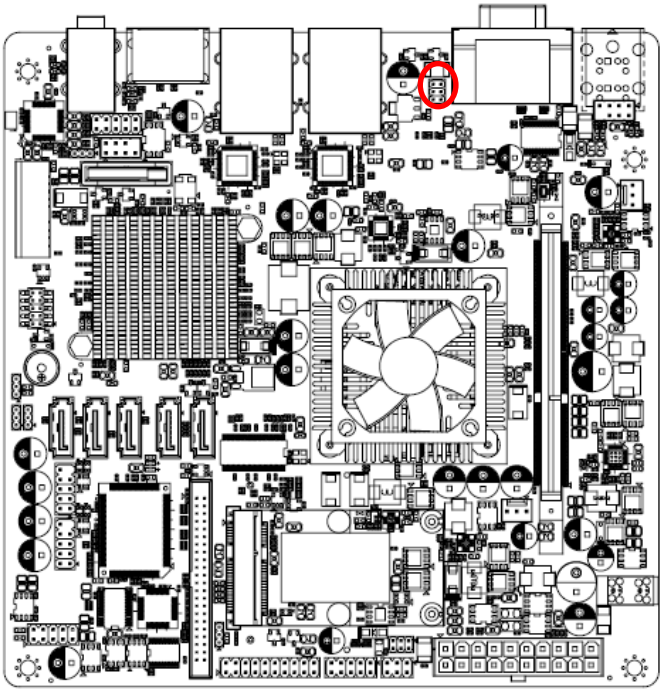


AT



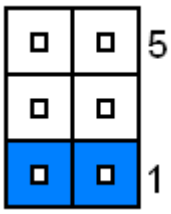
*** Default**

2.3.2 Serial port 1 pin9 signal selector (JRI1)

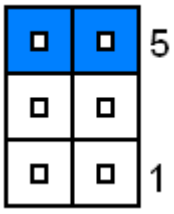


*** Default**

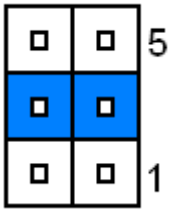
Ring*



+12V

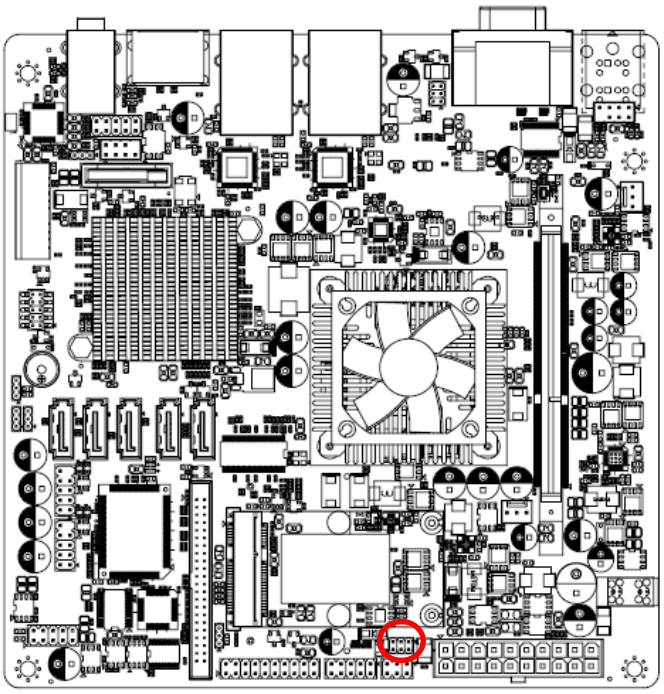


+5V

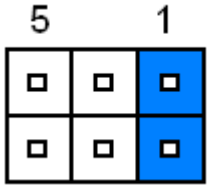


Signal	PIN	PIN	Signal
PNRI#_A	6	5	+12V
PNRI#_A	4	3	+5V
PNRI#_A	2	1	NRI#_A

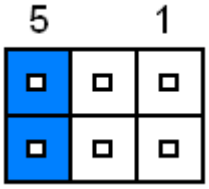
2.3.3 Serial port 2 pin9 signal selector (JRI2)



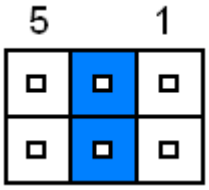
Ring*



+12V



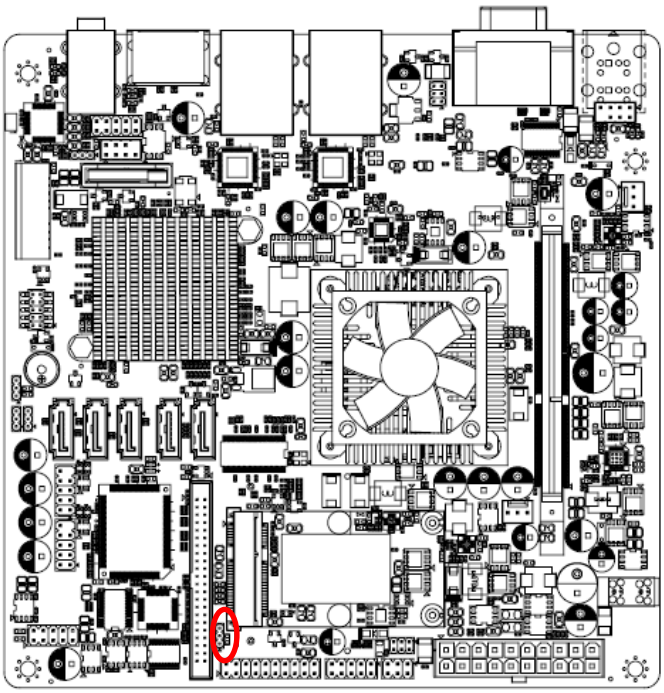
+5V



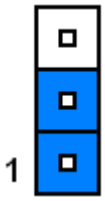
*** Default**

Signal	PIN	PIN	Signal
NRI#_B	1	2	PNRI#_B
+5V	3	4	PNRI#_B
+12V	5	6	PNRI#_B

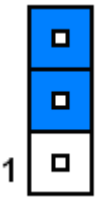
2.3.4 CF/IDE Master/SLAVE Selector (JCFMS1)



CF-MASTER, IDE-SLAVE*



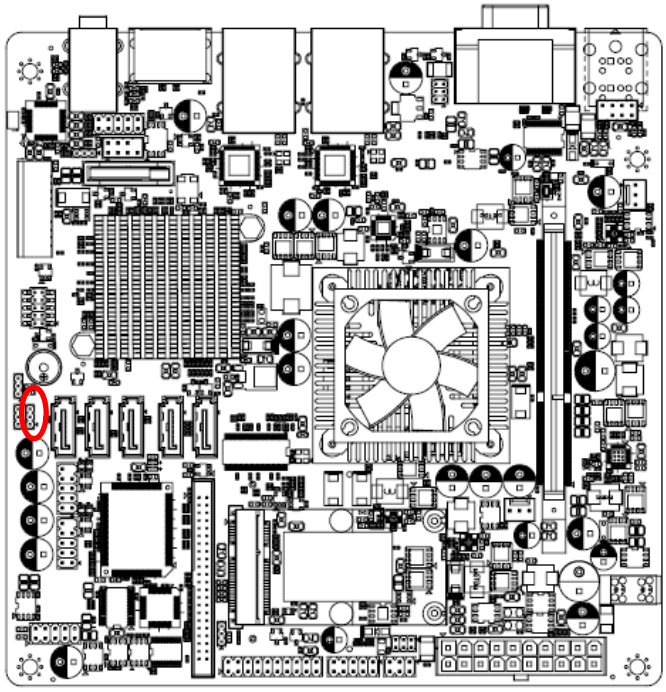
CF-SLAVE, IDE-MASTER



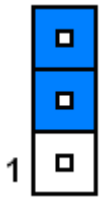
*** Default**

Signal	PIN
IDE_SEL#	3
GND	2
CF_SEL#	1

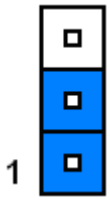
2.3.5 SATA Dom power jumper 1 (JSTDP1)



SATA CABLE*



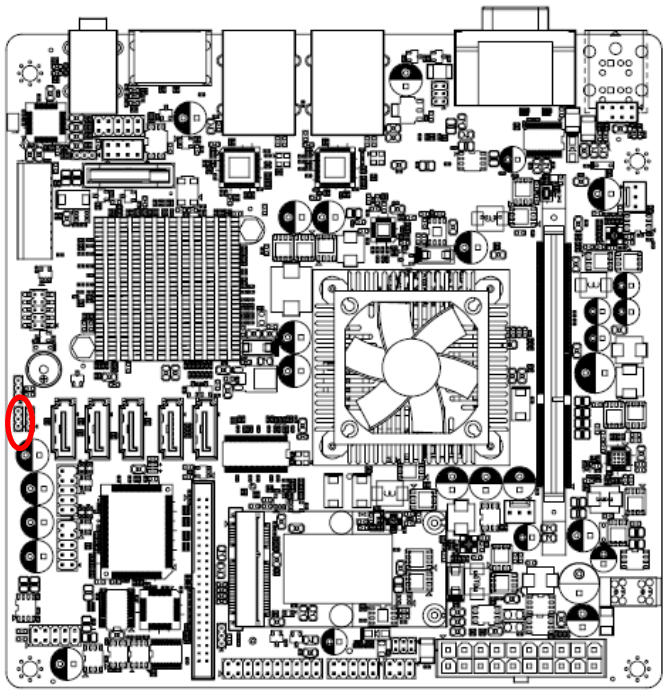
SATA DOM



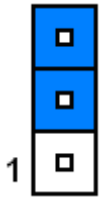
Signal	PIN
GND	3
SATADIMP1	2
+V5_SATA1	1

*** Default**

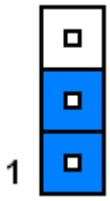
2.3.6 SATA Dom power jumper 2 (JSTDP2)



SATA CABLE*



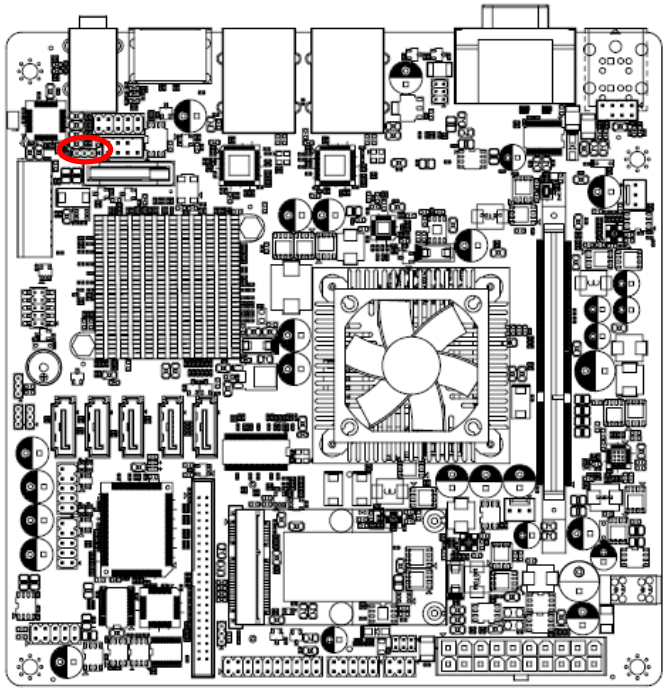
SATA DOM



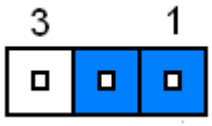
Signal	PIN
GND	3
SATADIMP2	2
+V5_SATA2	1

*** Default**

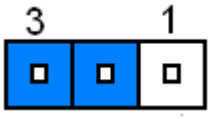
2.3.7 Clear CMOS (JRTC1)



Normal Operation *



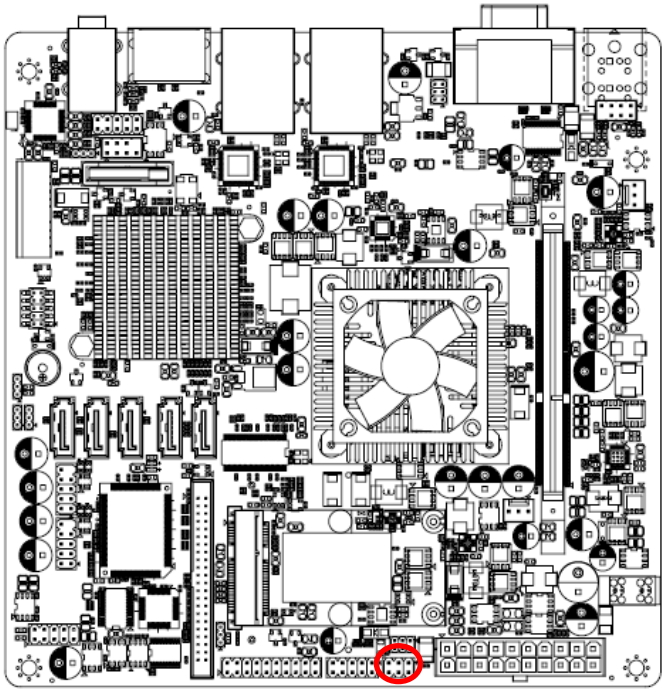
Clear CMOS

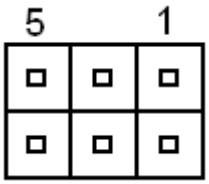


Signal	PIN
NC	1
RTC_RST#	2
GND	3

*** Default**

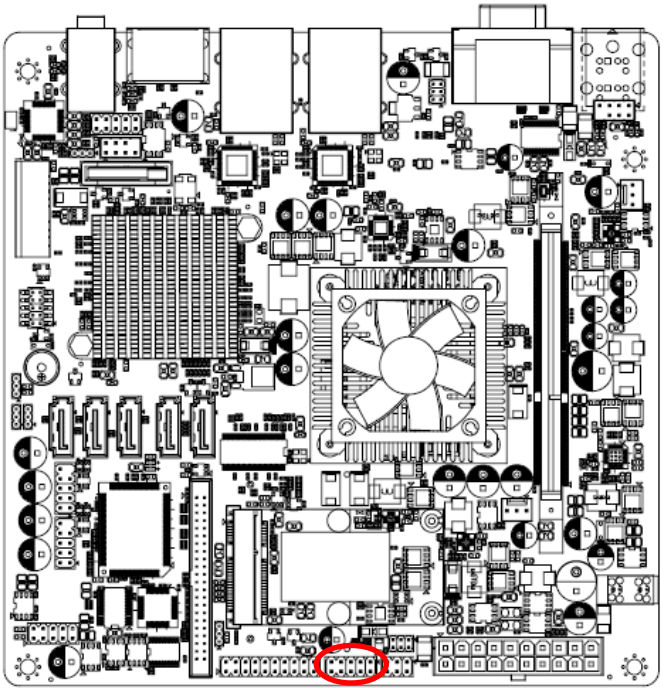
2.3.8 Serial port 2 in RS-422/485 mode (J422_485)

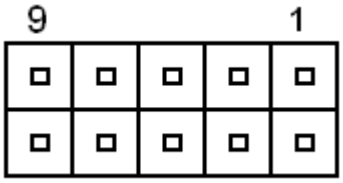




Signal	PIN	PIN	Signal
485TXB-	1	2	485RXB-
485TXB+	3	4	485RXB+
+V5_COM2	5	6	GND

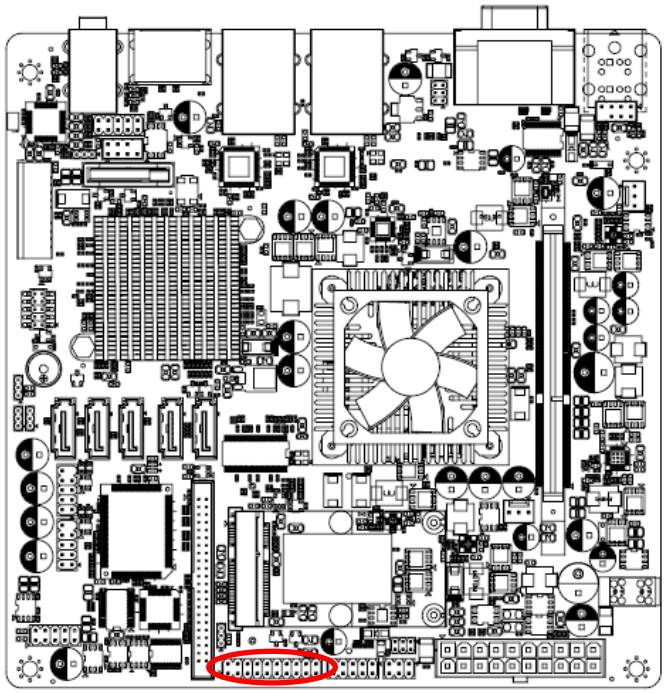
2.3.9 Serial port connector 2 (JCOM2)

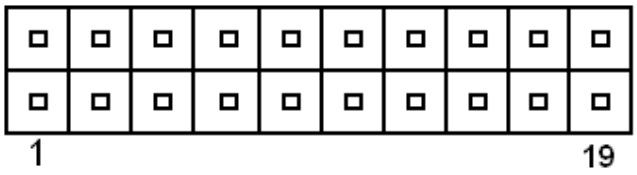




Signal	PIN	PIN	Signal
NDCD#_B	1	2	NRXD_B
NTXD_B	3	4	NDTR#_B
GND	5	6	NDSR#_B
NRTS#_B	7	8	NCTS#_B
PNRI#_B	9	10	NC

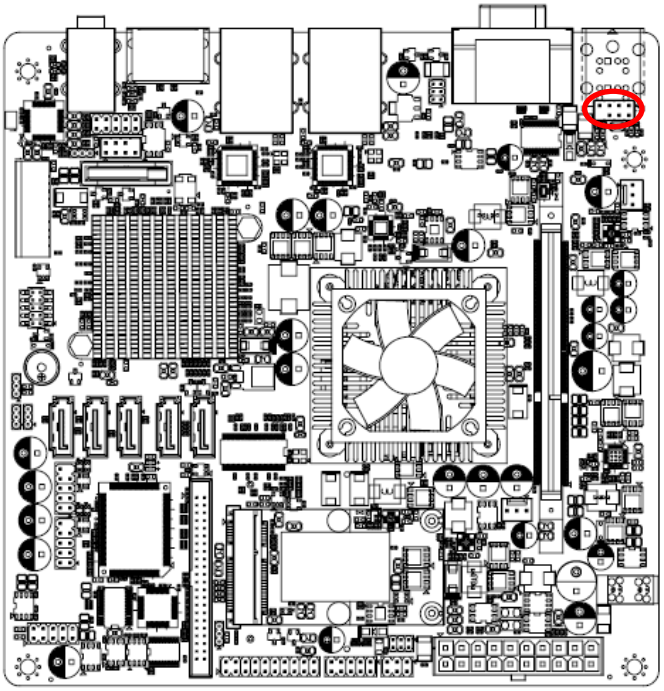
2.3.10 General purpose I/O connector (DIO1)

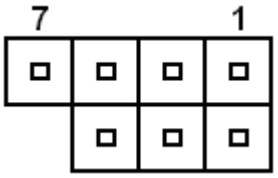




Signal	PIN	PIN	Signal
DI0	1	2	DO0
DI1	3	4	DO1
DI2	5	6	DO2
DI3	7	8	DO3
DI4	9	10	DO4
DI5	11	12	DO5
DI6	13	14	DO6
DI7	15	16	DO7
SMB_CLK_V5	17	18	SMB_DAT_V5
GND	19	20	+5V

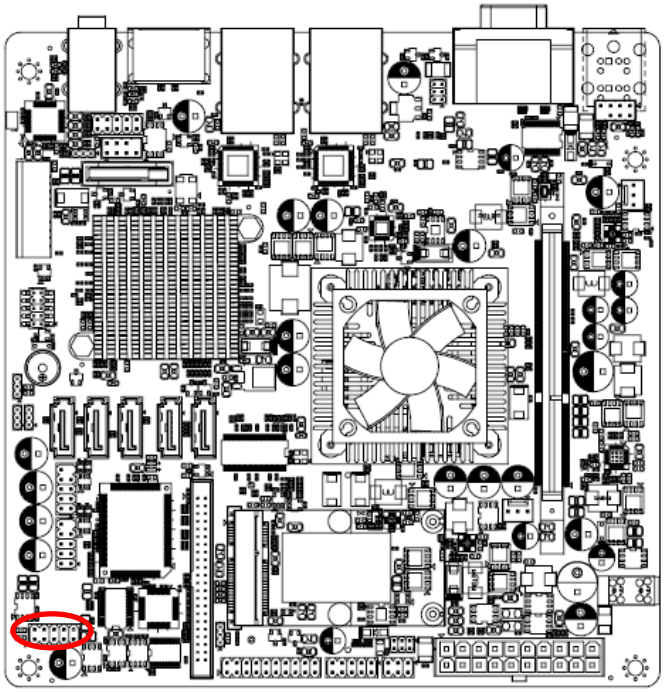
2.3.11 Keyboard/Mouse connector (KBMS2)

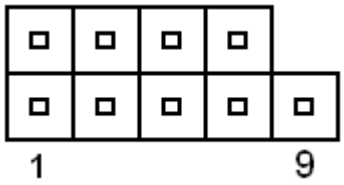




Signal	PIN	PIN	Signal
KB_DT	1	2	KB_CK
GND	3	4	+V5_KBMS
MS_DT	5	6	MS_CK
NC	7		

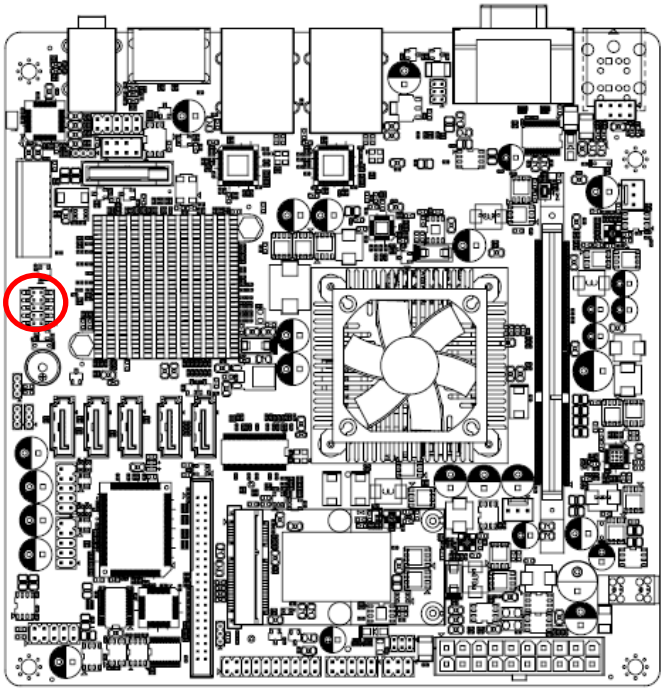
2.3.12 Miscellaneous settings connector (JFTP1)

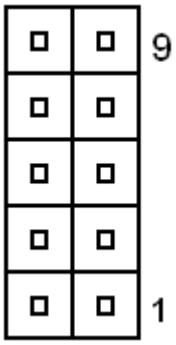




Signal	PIN	PIN	Signal
+3.3V	1	2	PWR_LED+
HDD_LED	3	4	GND
GND	5	6	POWER Button
SYS_RESET#	7	8	GND
NC	9		

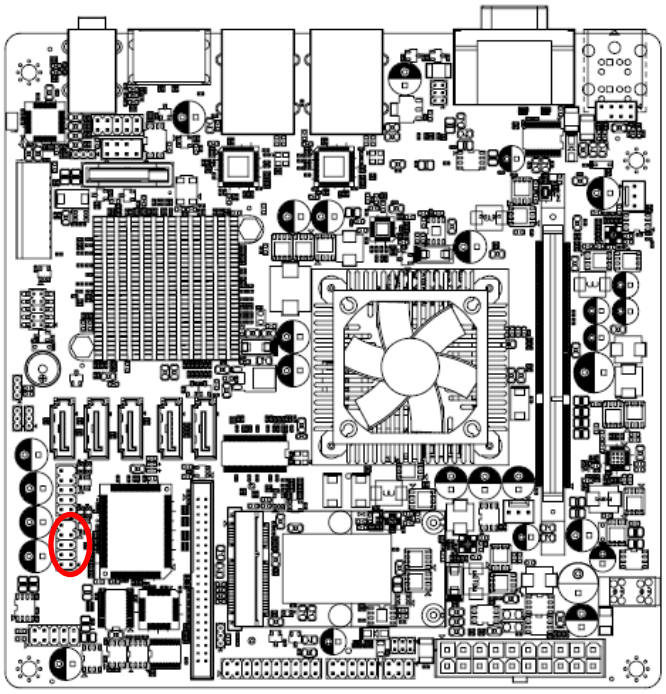
2.3.13 Low Pin Count connector (JLPC1)

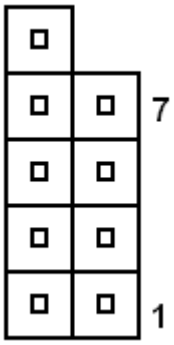




Signal	PIN	PIN	Signal
LPC_AD0	1	2	+3.3V
LPC_AD1	3	4	PLT_RST#
LPC_AD2	5	6	LPC_FRAME#
LPC_AD3	7	8	CLK_LPC
PCI_SERIRQ	9	10	GND

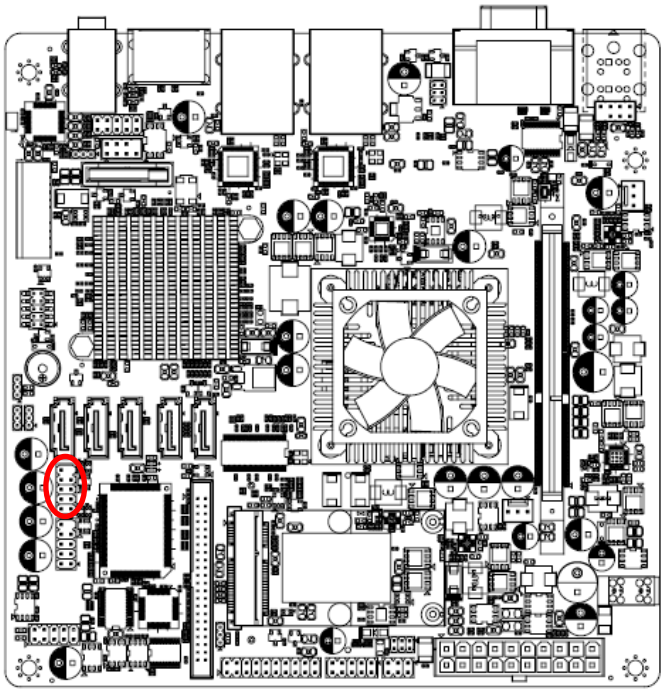
2.3.14 USB connector 1 (JUSB1)

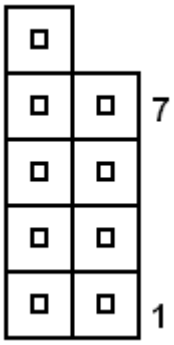




Signal	PIN	PIN	Signal
NC	10		
GND	8	7	GND
USB_D+	6	5	USB_D+
USB_D-	4	3	USB_D-
+5V	2	1	+5V

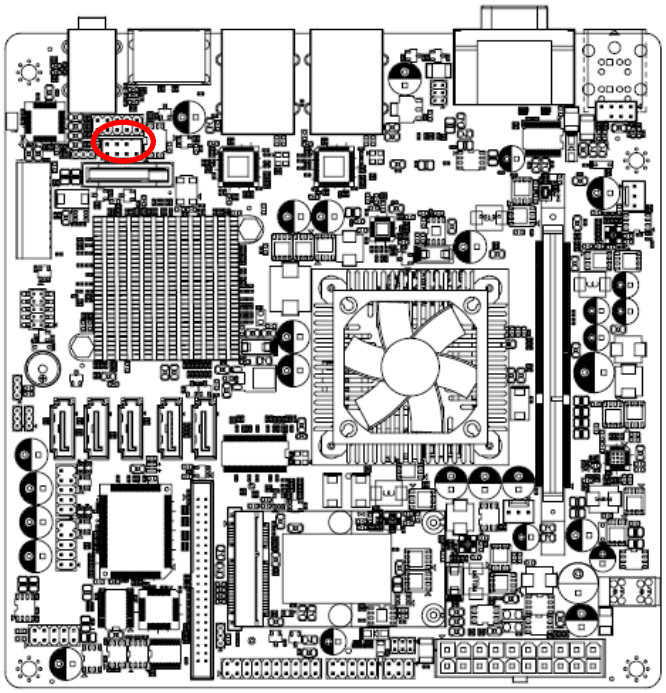
2.3.15 USB connector 2 (JUSB2)

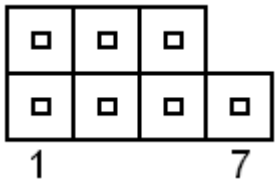




Signal	PIN	PIN	Signal
NC	10		
GND	8	7	GND
USB_D+	6	5	USB_D+
USB_D-	4	3	USB_D-
+5V	2	1	+5V

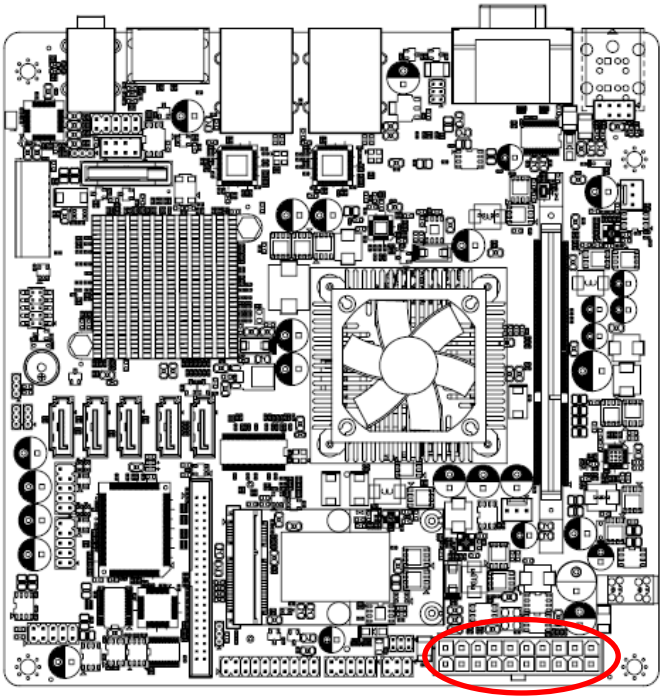
2.3.16 SPI connector (SPI1)

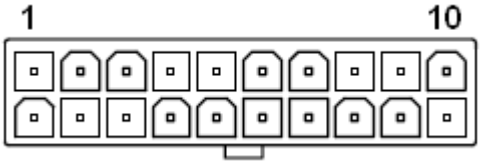




Signal	PIN	PIN	Signal
+3.3V	1	2	GND
SPI_CS0#	3	4	SPI_CLK
SPI_SO	5	6	SPI_SI
SPI_HOLD#	7		

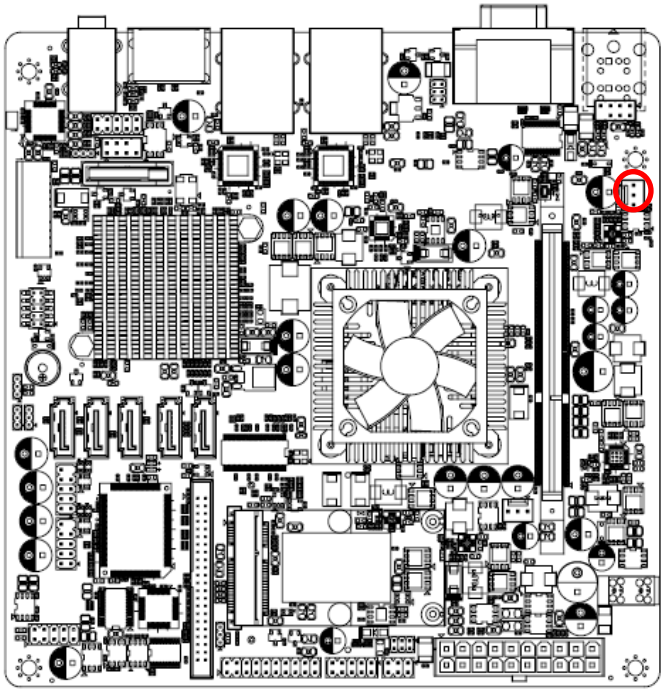
2.3.17 ATX power connector (PWR1)

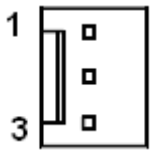




Signal	PIN	PIN	Signal
+3.3V	1	11	+3.3V
+3.3V	2	12	NC
GND	3	13	GND
+5V	4	14	PS_ON#
GND	5	15	GND
+5V	6	16	GND
GND	7	17	GND
ATXPGD	8	18	NC
+5V	9	19	+5V
+12V	10	20	+5V

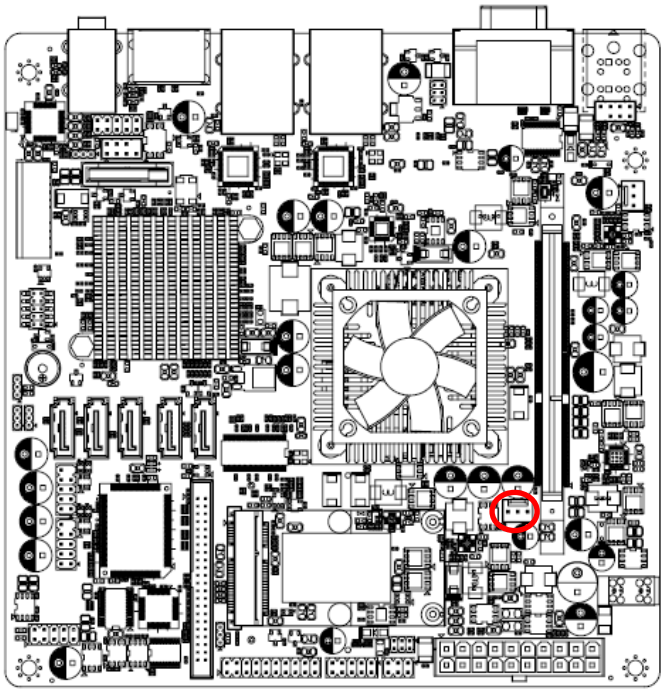
2.3.18 System Fan connector (SYS_FAN1)

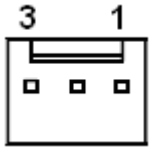




Signal	PIN
GND	1
SYSFAN_PWR	2
SYSFANIN	3

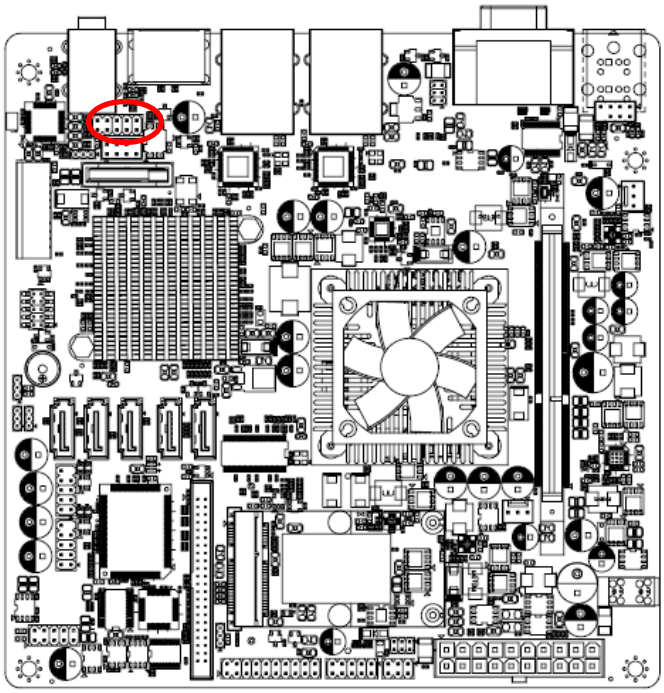
2.3.19 CPU fan connector 1 (CPU_FAN1)

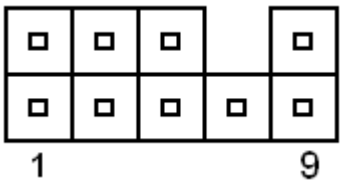




Signal	PIN
GND	1
CPUFAN_PWR	2
CPUFANIN	3

2.3.20 Audio connector (JAUD1)



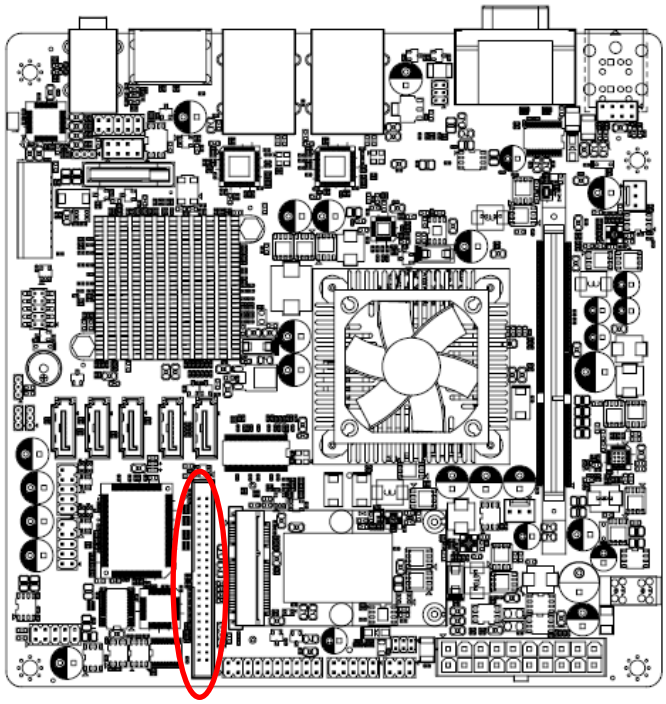


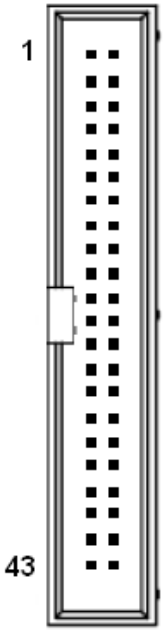
Signal	PIN	PIN	Signal
MIC2-L-IN	1	2	GND
MIC2-R-IN	3	4	ACZ_DET#
LINE2-R-OUT	5	6	MIC2_SJD
FRONT-IO-SENSE	7		
LINE2-L-OUT	9	10	LINE2_SJD

2.3.20.1 Signal Description – Audio connector (JAUD1)

Signal	Signal Description
LINE2_SJD	AUDIO Out (ROUT/LOUT) sense pin
MIC2_JD	MIC IN (MIC_RIN/LIN) sense pin
ACZ_DET#	Detect if there is Front Audio board contected
FRONT-IO-SENSE	Detect whether MIC2 or LINE2 is contected or not

2.3.21 Primary IDE connector (IDE1)





Signal	PIN	PIN	Signal
IDE_RST#	1	2	GND
IDE_PDD7	3	4	IDE_ PDD8
IDE_ PDD6	5	6	IDE_ PDD9
IDE_ PDD5	7	8	IDE_ PDD10
IDE_ PDD4	9	10	IDE_ PDD11
IDE_ PDD3	11	12	IDE_ PDD12
IDE_ PDD2	13	14	IDE_ PDD13
IDE_ PDD1	15	16	IDE_ PDD14
IDE_ PDD0	17	18	IDE_PDD15
GND	19	20	NC
IDE_PDDREQ	21	22	GND
IDE_PDIOW#	23	24	GND
IDE_PDIOR#	25	26	GND
IDE_PIORDY	27	28	IDE_SEL#
IDE_PDDACK#	29	30	GND
IDE_PINTRQ	31	32	NC
IDE_PDA1	33	34	IDE_PDIAG
IDE_PDA0	35	36	IDE_PDA2
IDE_PDCS1#	37	38	IDE_PDCS3#
IDE_ACT#	39	40	GND
+5V	41	42	+5V
GND	43	44	NC